Epitomes

Important Advances in Clinical Medicine

Urology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in urology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers or scholars to stay abreast of these items of progress in urology that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Urology of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to Division of Scientific and Educational Activities, California Medical Association, PO Box 7690, San Francisco, CA 94120-7690

New Developments in Diagnosing and Treating Erectile Impotence

THE UNDERSTANDING of erectile physiology and the treatment of erectile dysfunction continue to be dynamically expanding areas of urologic knowledge.

With a better understanding of the physiology and more sophisticated testing techniques, it has been determined that in 85% of men with impairment for more than a year, there is an organic origin (as opposed to 90% a psychological one, as believed historically).

Organic impotence is due to "failure to initiate" (neurogenic), "failure to fill" (arteriogenic) or "failure to store" (corporal venous leakage). Diagnostic tests are directed toward identifying which of these is the origin so that the most desirable therapy can be selected.

Failure to initiate (neurogenic cause) is generally nonreversible, though the lack of neurologic initiation can be overridden by direct intracorporal pharmacologic stimulation (papaverine hydrochloride and phentolamine mesylate).

Intracorporal pharmacologic stimulation can also be successful in cases of "failure to fill" (atherosclerotic occlusive disease) because the long duration of the stimulus results in filling even with diminished flow. It can also be successful with "failure to store" because the stimulus creates enough flow and tumescence to reduce the venous leak.

Failures to fill and to store are both amenable to a reconstructive vascular operation, which has received a great deal of attention as the procedures—arterial revascularization and venous leak ligation—have shown increased success.

Patients with venous leak or "failure to store" present an especially interesting problem. They most often have had trauma, atherosclerotic occlusive disease or Peyronie's disease. To establish the diagnosis, a new test—dynamic infusion cavernosometry and cavernosography—was developed. Constant penile infusion is done during pharmacologically induced (papaverine and phentolamine) tumescence that should approximate the physiologic state of maximal corporovenous occlusion. If the corporal body pressure falls by more than 30 mm of mercury in 30 seconds (from a beginning pressure of more than 150 mm of mercury), it is diagnostic of a venous leak. The location of the leak is then identified radiographically by intracorporal infusion of dilute radiopaque contrast solution so that the most appropriate surgical procedure can be selected. The procedures of venous ligation, reduction cavernoplasty or dorsal vein arterialization (Virag V operation) have about 60% success in restoring normal erections.

For those whose erectile function cannot be satisfactorily restored using nonoperative means, a reconstructive vascular operation offers an alternative to penile prosthesis, particularly for those patients who are concerned emotionally about the idea of an "artificial erection" produced by a prosthesis.

HARIN PADMA-NATHAN, MD
Boston

REFERENCES

Padma-Nathan H, Goldstein I: Corporal leakage syndrome: The role of dynamic infusion cavernosometry and cavernosography (DICC) (Abstr). J Urol 1987 Apr; 137 (pt 2):184A

Padma-Nathan H, Goldstein I, Krane RJ: Evaluation of the impotent patient. Semin Urol 1986 Nov; 4:225-232

Padma-Nathan H, Payton T, Goldstein I: Treatment for organic impotence: Alternatives to the penile prosthesis—Parts 1 and 2, American Urological Association Update Series, Lessons No. 11 and 12, Vol 6. Houston, American Urological Association, 1987, pp 1-7

The Continent Urinary Diversion

THE SEARCH FOR A satisfactory urinary diversion has intrigued and plagued urologists for more than a century. Ideally such a diversion should duplicate the function of the bladder in being able to effectively collect and store urine without an external appliance, permit emptying under voluntary control, preserve renal function and maintain an optimal quality of life.

The most popular urinary diversion has been the refluxing ileal conduit, which requires an external collecting appliance. For many years the search has continued for a more desirable diversion. Not only do patients with ileal conduits have a high frequency of late complications (chronic pyelonephritis, stones and renal failure) from long-standing reflux, but the psychosocial stigma associated with wearing an appliance can have a pronounced impact on body image and may even deter patients from undergoing a needed radical cystectomy.

Over the past decade there has been heightened interest in forms of diversion that prevent reflux and are continent so that the external appliance is eliminated. The success of these diversions has improved with the development of techniques to transform bowel segments into urinary reservoirs and the creation of functioning urinary sphincters. Various diversion techniques have evolved worldwide, differing by the type of